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(54) CATALYTIC COMBUSTION APPARATUS

(57) Abstract:

PURPOSE: To keep stabilized combustion in a catalytic combustion apparatus, by providing a honeycomb heat insulating plate, a honeycomb catalyst body, and a back fire preventive plate in the combustion apparatus from the downstream side to the upstream side in order, and by providing a diffusion plate made of expanded ceramics between a vaporizing cylinder and a back fire preventive plate.

CONSTITUTION: A combustion cylinder 17 made of heat-resistant metal is composed of a honeycomb heat insulating plate 14 and a honeycomb catalyst body 15, and an ignition heater 16 is provided between them. A mixing cylinder 18 made of metal of high thermal conductivity, Al, for example, is fitted to the bottom of a combustion cylinder 17, and a vaporizing cylinder 20, having built-in sheath heater 19 in it, is fitted to the bottom of a mixing cylinder 18. A diffusion plate 23 made of expanded ceramics is provided in the mixing cylinder 18 underneath a back fire preventive plate 21, consisting of porous plate made of ceramics, and a punched injection plate 22. A resistance 24 consisting of wire net is provided to the opening to connect the mixing cylinder 18 with the vaporizing cylinder 20. With such an arrangement, comparatively compact combustion

chamber can be composed, in which stabilized combustion can be taken place, if the rate of combustion and the rate of air are largely changed.

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